

**TABLE OF CONTENTS**

Population Projections

Low End Population Projections

Table 1: Low End Population Projections

High End Population Projections

Table 2: High End Population Projections

Chart 1: Historic and Forecasted Population Projections

Demand Analysis—Residential and Non-residential

Residential Demand Analysis

Non-Residential Demand Analysis

Projected Non-Residential Square Footage Related to Population Growth

Population and Residential and Non-Residential Demand Summary

### **General Note on Rounding**

Spreadsheet software was used in the calculations presented in this document, with figures carried to their ultimate decimal places. For purposes of reporting, results are presented in whole numbers. The sums generated by the software may not equal the sum of calculations replicated by using the rounded figures presented in this report.

### **Population Projections**

In April of 2001, Williamson County and its six (6) municipalities approved the population projections in accordance with Tennessee's Public Chapter 1101 with regards to the creation of the Urban Growth Boundaries. Additionally, Woods and Poole released their revised projections for the entirety of Williamson County in early 2005. These two individual sets of numbers, combined with the decennial censuses from 1970 through 2000 were utilized in order to derive both a High End population projection for the entirety of Williamson County and a Low End population projection for the Unincorporated County to 2030, the established horizon year.

### **Low End Population Projections**

The Low End projection, completed only for the Unincorporated County, was derived using the trend line developed from the population from the decennial censuses for the years 1970 through 2000. This provides a "straight line" trend for anticipated growth for the unincorporated county. This trend is based on the historical county growth rate average of about 1.35 % (1970-2000).

Table 1: Low End Population Projections

	*1970	*1980	*1990	*2000	2005	2010	2015	2020	2025	2030
Unincorporated Williamson County	19,197	30,335	39,442	45,816	51,490	55,939	60,387	64,834	69,238	73,731

\* Decennial Census Population

### **High End Population Projections**

The High End population projections for the entirety of Williamson County were derived from the Woods and Poole 2005 Data Information. These numbers were slightly higher than those published in 2004. The Woods and Poole numbers included the official population for the years 1970 through 2000 from the decennial censuses.

Utilizing the Woods and Poole and the published Public Chapter 1101 numbers, the population for the entirety of the Williamson County projected forward to 2030. This includes the six (6) municipalities. Several assumptions were made with regards to the population projections as it was noted some projections did not follow past trends, particularly within the unincorporated county, the Town of Nolensville and Thompson's Station.

---

(Draft) **POPULATION AND DEMAND ANALYSIS**

---

- As the cities had either published populations in accordance with Public Chapter 1101 or revised their projections (Franklin) for the years 2010 and 2020, it was not possible for the overages calculated by the Woods and Poole 2005 data to be shared with the cities, and therefore, the unincorporated county received the overages.
- The published Public Chapter 1101 numbers and the projection made by the City of Franklin for 2010 and 2020 do not appear to match actual trends with regards to population growth.
- No building permit trends were available for Nolensville or Thompson's Station, and thus, making it difficult to project exactly how much of the overages from the Woods and Poole projections these cities would absorb. Moreover, with the enhanced availability of sewer in these communities, it is expected their rate of growth will accelerate.

Table 2: High End Population Projections

	1970	1980	1990	2000	2005	2010	2015	2020	2025	2030
Williamson County (Entire County)	*34,423	*58,108	*81,021	*126,638	**152,710	**179,360	**206,880	**234,730	**263,120	**292,530
Brentwood	4,099	10,701	16,392	23,445	28,984#	37,600	42,098#	45,300	51,314	57,452
Fairview	1,630	3,648	4,210	5,800	6,795#	7,448	8,044#	8,961	10,580	12,164
Franklin	9,497	13,424	20,098	41,842	53,152(1)	62,500	72,484#	78,000	87,969	98,204
Nolensville	X	X	X	3,099	4,569#	6,546	8,159#	9,993	11,736	13,451
Spring Hill	X	X	176	5,353	7,273#	8,583	10,509#	12,000	13,986	15,952
Thompson's Station	X	X	703	1,283	1,540#	1,717	1,889#	2,123	2,915	3,643
Unincorporated Williamson County	19,197	30,335	39,442	45,816	50,398	54,966	63,698	78,353	84,621	91,665

\* Decennial Census Population

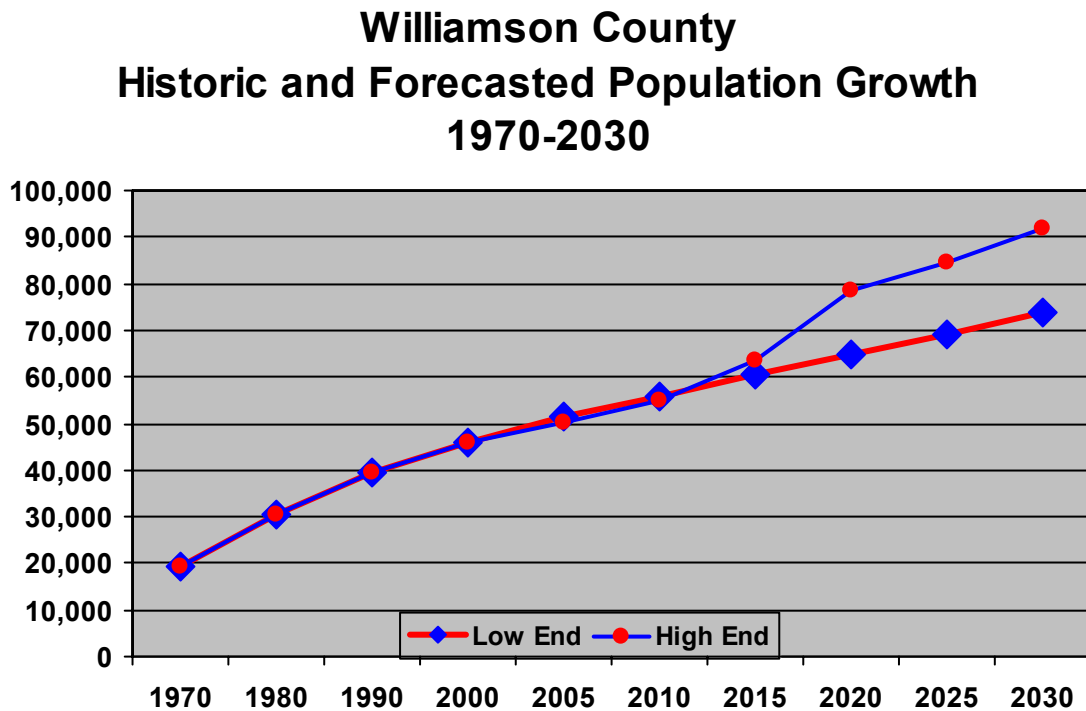
\*\*Woods and Poole 2055 Data Information

# Public Chapter 1101

(1) Revised by the City of Franklin

The chart on the following page illustrates the differences in the two scenarios.

Chart 1: Williamson County Historic and Forecasted Population Growth



These projections will now be used to project the anticipated number of dwelling units and the anticipated non-residential square footage needed per dwelling unit for the Unincorporated County.

## **Demand Analysis—Residential and Non-Residential**

### **Residential Demand Analysis**

The demand for housing units for the Unincorporated County is derived by using both the Low and High End population projections. This analysis is used to derive the number of single-family units. Additionally, the projected number of persons per household is 2.63 and is taken from the Woods and Poole 2005 Data Information.

The following formula is used to derive both the Low and High single-family housing demands

- Number of Dwelling Units = (2030 population – 2005 population) / 2.63 persons per household
- Low End—  $(73,731 - 51,490) / 2.63 = 8,457$  Dwelling Units
- High End—  $(91,665 - 50,398) / 2.63 = 15,691$  Dwelling Units

Based on these projections, the range of new single-family Dwelling Units that could be expected in the Unincorporated County would be between **8,457 and 15,691** units.

To project the land consumption needed for the dwelling units is broken down between Platted and non-platted lots. For the purpose of this update, the average Platted lot size was established at 1.64 acres (Average derived lot size for platted subdivisions from 2000-2004) and the average lot size of Non-Platted or exempt lots were established at 5.00 acres. The end result was both acres of land needed and square miles needed. The following formulas were used to calculate the end results.

#### **Platted Lots**

Dwelling Units X % of Platted Lots = Dwelling Units estimated to build upon Platted Lots  
Dwelling Units on Platted Lots X 1.64 ac. For platted lot = Acreage needed for Dwelling Units  
Acreage needed for Dwelling Units / 640 acres in a square mile = Square miles of Land Needed

#### **Non-Platted Lots**

Dwelling Units X % of Non-Platted Lots = Dwelling Units estimated to build upon Non-Platted Lots  
Dwelling Units on Non-Platted Lots X 5.00 ac. For Non-platted lot = Acreage needed for Dwelling Units  
Acreage needed for Dwelling Units / 640 acres in a square mile = Square miles of Land Needed

For platted lots, the Low End Projection land consumption was **8,494.21 acres or 13.27 square miles**.

For platted lots, the High End Projection land consumption was **15,954 acres or 24.93 square miles**.

- Based on these projections, the land consumption for Platted lots expected in the Unincorporated County would be between **8,494.21 acres and 15,954 acres OR** between **13.27 square miles and 24.93 square miles**.

For non-platted lots, the Low End Projection land consumption was **16,070 acres or 25.11 square miles**.

For non-platted lots, the High End Projection land consumption was **29,815 acres or 45.59 square miles**.

- Based on these projections, the land consumption for Non-Platted lots expected in the Unincorporated County would be between **16,070 acres and 29,815 acres OR** between **25.11 square miles or 45.59 square miles**.

### **Non-Residential Demand Analysis**

In deriving the demand for land needed, the number of building permits issued, the number of platted lots, and the number of non-platted lots from the years 2000 to 2004 were tallied and used in the formulas presented in this analysis.

- There were 107,925 square feet of non-residential building permits issued. This excludes churches and schools and the Williamson County Agricultural Expo Center that were built during these years.
- There were 2,049 residential building permits issued, and of those, 62% or 1,270 units were on platted lots and 38% or 779 units were on non-platted or exempt lots.
- Assumes a .1 Floor Area Ratio (FAR)

The projected Non-Residential square footage required per dwelling unit was projected using the following formulas:

Total Building Permits for Non-Residential square footage / Number of building permits issued = the square footage needed per Dwelling Unit.

Dwelling Units X sq. footage needed per D.U. = Total Square footage required

Total square footage required X .1 FAR= Total square footage required to meet FAR requirement

## --- (Draft) **POPULATION AND DEMAND ANALYSIS** ---

Total square footage required to meet FAR requirement / 43,560 sq. feet/acre =  
Total Acres Required

Total Acres Required / 640 ac. In square miles = Square miles

### **Projected Non-Residential Square Footage Related to Population Growth**

The Low End land area needed for non-residential uses per dwelling unit was **103 Acres or .16 square miles**.

The High End land area needed for non-residential uses per dwelling unit was **191 Acres or .30 square miles**.

- Based on these projections, the land consumption for non-residential uses expected in the Unincorporated County would be between **103 Acres and 191 Acres OR** between **.16 square miles or .30 square miles**.

### **Population and Residential and Non-Residential Demand Summary**

Based on these projections, it is projected that the population of the Unincorporated County would increase between 27,925 and 45,849 people by 2030. This population will require between 8,457 and 15,691 new housing units and will consume between 8,494 and 29,815 acres of land depending on the type of lot utilized (platted vs. non-platted). This population will also require between 103 and 191 acres of land for new non-residential uses.